

=> fil reg

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 DICTIONARY FILE UPDATES: 13 MAY 2007 HIGHEST RN 934672-05-6

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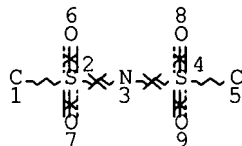
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REGISTRY includes numerically searchable data for experimental and  
 predicted properties as well as tags indicating availability of  
 experimental property data in the original document. For information  
 on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d l7 que stat

L3 STR



#### NODE ATTRIBUTES:

NSPEC IS RC AT 1  
 NSPEC IS RC AT 5  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

#### GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 9

#### STEREO ATTRIBUTES: NONE

L7 9097 SEA FILE=REGISTRY SSS FUL L3

100.0% PROCESSED 12559 ITERATIONS  
 SEARCH TIME: 00.00.01

9097 ANSWERS

=> d his nofile

(FILE 'HOME' ENTERED AT 16:52:52 ON 14 MAY 2007)

FILE 'HCAPLUS' ENTERED AT 16:52:59 ON 14 MAY 2007

L1 1 SEA ABB=ON PLU=ON US2005100795/PN

FILE 'REGISTRY' ENTERED AT 16:53:26 ON 14 MAY 2007  
L2 15 SEA ABB=ON PLU=ON (105-58-8/BI OR 108-32-7/BI OR

FILE 'LREGISTRY' ENTERED AT 17:22:45 ON 14 MAY 2007  
L3 STR  
L4 STR

FILE 'REGISTRY' ENTERED AT 17:25:44 ON 14 MAY 2007  
L5 13 SEA SSS SAM L3 AND L4  
L6 50 SEA SSS SAM L3  
L7 9097 SEA SSS FUL L3  
SAV L7 WEI013/A  
L8 5 SEA ABB=ON PLU=ON L2 AND L7  
L9 303 SEA ABB=ON PLU=ON L7 AND (T1 OR T2 OR T3 OR B2)/PG  
L10 110 SEA ABB=ON PLU=ON L7 AND LNTH/PG

FILE 'HCAPLUS' ENTERED AT 17:32:13 ON 14 MAY 2007  
L11 QUE ABB=ON PLU=ON ELECTROLY?  
L12 12 SEA ABB=ON PLU=ON L9(L)L11  
L13 5 SEA ABB=ON PLU=ON L10(L)L11  
L14 16 SEA ABB=ON PLU=ON L12 OR L13  
L15 QUE ABB=ON PLU=ON IMIDE#(2A)ANION  
L16 QUE ABB=ON PLU=ON (TRANSITION? OR LANTHANID? OR  
LANTHANOID? OR LANTHANON? OR LNTH) (2A)METAL?  
L17 QUE ABB=ON PLU=ON SULFONA? OR SULPHONA? OR SULFONY? OR  
SULPHONY? OR SOLPHONIC?  
L18 9 SEA ABB=ON PLU=ON L15 AND L16  
L19 44 SEA ABB=ON PLU=ON L15 AND L17  
L20 1 SEA ABB=ON PLU=ON L18 AND L19  
L21 16 SEA ABB=ON PLU=ON L14 OR L20

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 17:41:19 ON 14 MAY 2007  
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FILE COVERS 1907 - 14 May 2007 VOL ISS ISS  
FILE LAST UPDATED: 13 May 2007 (20070513/ED)  
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FILE COVERS 1907 - 14 May 2007 VOL 146 ISS 21  
FILE LAST UPDATED: 1 May 2007 (20070501/ED)

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This file contains CAS Registry Numbers for easy and accurate

=> d l21 ibib abs hitstr hitind 1-16

L21 ANSWER 1 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:1338486 HCAPLUS Full-text  
 DOCUMENT NUMBER: 146:89965  
 TITLE: Environmentally safe beryllium-free  
 electrochromic mirrors  
 INVENTOR(S): Agrawal, Anoop; Cronin, John P.; Tonazzi, Juan  
 Carlos Lopez  
 PATENT ASSIGNEE(S): Electrochromix, Inc., USA  
 SOURCE: U.S. Pat. Appl. Publ., 15pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2006285190	A1	20061221	US 2006-454055	20060615

PRIORITY APPLN. INFO.:

US 2005-692025P

P

20050617

AB This invention recognizes the hazards of beryllium and beryllium oxide in automotive applications and offers alternative material solns. for beryllium-free electrochromic mirrors. Further, this can be combined by reducing other known hazards such as mercury, cadmium, lead and antimony compds.

IT 811800-51-8

RL: PRP (Properties); TEM (Technical or engineered material use);  
 USES (Uses)

(Fc-Vio imide, solid **electrolyte** containing;  
 environmentally safe beryllium-free electrochromic mirrors)

RN 811800-51-8 HCAPLUS

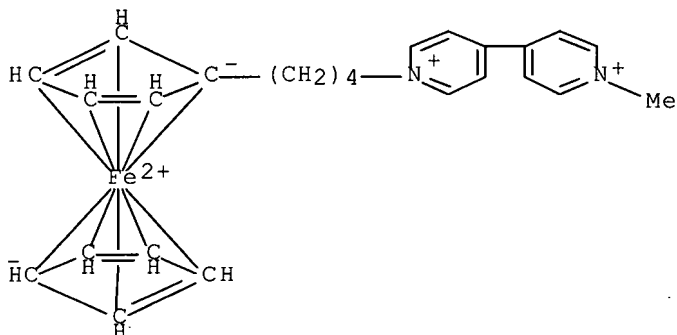
CN 4,4'-Bipyridinium, 1-(4-ferrocenylbutyl)-1'-methyl-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 289497-85-4

CMF C25 H28 Fe N2

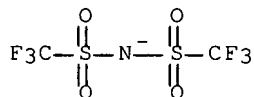
CCI CCS



CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



INCL 359265000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 38, 76

IT 811800-51-8

RL: PRP (Properties); TEM (Technical or engineered material use);  
USES (Uses)(Fc-Vio imide, solid **electrolyte** containing;  
environmentally safe beryllium-free electrochromic mirrors)

L21 ANSWER 2 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:361613 HCAPLUS Full-text

DOCUMENT NUMBER: 146:185387

TITLE: Conductivities of electrolytes based on  
PEI-b-PEO-b-PEI triblock copolymers with lithium  
and copper TFSI saltsAUTHOR(S): Ionescu-Vasii, Luminita L.; Garcia, Beatrice;  
Armand, MichelCORPORATE SOURCE: Laboratoire International sur les Materiaux  
Electro-Actifs, CNRS UMR 2289, Fr.

SOURCE: Solid State Ionics (2006), 177(9-10), 885-892

CODEN: SSIOD3; ISSN: 0167-2738

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Tri block-copolymer poly(iminoethylene)-b-poly(oxyethylene)-b- poly(iminoethylene) with a poly(oxyethylene) central block (PEI-b-PEO-b-PEI) were used as a "dual" matrix for polymer electrolytes having selectivity for hard cations (Li+/PEO) in one phase and for soft cations (Cu2+/PEI) in the other. Conductivity measurements were recorded for 20:1, 12:1 and 8:1 coordinating atom (O or/and N) to cation (Li+, Cu2+) ratios, for each of the three complexes studied: PEI-b-PEO-LiTFSI-b-PEI, PEI-Cu(TFSI)2-b-PEO-b-PEI- Cu(TFSI)2 and PEI-Cu(TFSI)2-b-PEO-LiTFSI-b-PEI-Cu(TFSI)2. For either low (20°C) or high temperature (80°C) the highest conductivity was given by the polymer electrolyte based on Cu(TFSI)2 with N/Cu2+ = 20:1 (10<sup>-6</sup>, resp. 2 + 10<sup>-4</sup> S cm<sup>-1</sup>). In the present paper, the conductivity evolution is discussed in relation with the polymer structure, the type and the concentration of the salt and the thermal behavior of our systems.

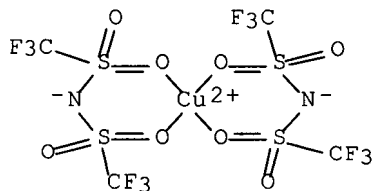
IT 162715-14-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(conductivities of poly(iminoethylene)-poly(oxyethylene) triblock  
copolymer **electrolytes** with lithium and copper TFSI  
salts)

RN 162715-14-2 HCAPLUS

CN Copper, bis[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-

[O-]methanesulfonamidato-kO]- (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)

IT 90076-65-6, Lithium bis(perfluoromethylsulfonyl)imide  
162715-14-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(conductivities of poly(iminoethylene)-poly(oxyethylene) triblock  
copolymer **electrolytes** with lithium and copper TFSI  
salts)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L21 ANSWER 3 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:90740 HCAPLUS Full-text

DOCUMENT NUMBER: 144:342577

TITLE: A New Strategy for Synthesis of Novel Classes of  
Room-Temperature Ionic Liquids Based on  
Complexation Reaction of Cations

AUTHOR(S): Huang, Jing-Fang; Luo, Huimin; Dai, Sheng

CORPORATE SOURCE: Chemical Sciences Division, Oak Ridge National  
Laboratory, Oak Ridge, TN, 37831, USA

SOURCE: Journal of the Electrochemical Society (2006),  
153(2), J9-J13  
CODEN: JESOAN; ISSN: 0013-4651

PUBLISHER: Electrochemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Ionic liqs. were synthesized with a new methodol. The essence of this methodol.  
is to form the cations of ionic liqs. through the complexation reactions of  
neutral organic ligands with metal ions, followed by the subsequent metathesis  
reactions of the resulting salts with anion donors. The authors chose N-  
lithiotrifluoromethanesulfonimide (Li+ Tf2N-) as a candidate for anion donors  
because Tf2N- anions have high thermal stabilities and weakly coordinating  
properties, which are crucial to the generation of less viscous and more  
hydrophobic ionic liqs. The transition-metal ions chosen were Ag+ and Zn2+. The  
uses of these ionic liqs. as new electrolytes for electrodeposition were  
demonstrated.

IT 858101-35-6P 858101-36-7P 858101-37-8P

858101-39-0P 858101-41-4P 858101-43-6P

858101-45-8P 858101-47-0P 880261-01-8P

880261-03-0P 880261-06-3P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); PRP (Properties); RCT (Reactant); SPN (Synthetic  
preparation); PREP (Preparation); PROC (Process); RACT (Reactant or  
reagent)

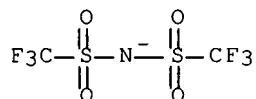
(preparation and electrochem. properties of silver and zinc amine  
trifluoromethanesulfonimide room-temperature ionic liqs. and use as  
**electrolytes** for metal electrodeposition)

RN 858101-35-6 HCAPLUS  
 CN Silver(1+), bis(1-propanamine)-, salt with 1,1,1-trifluoro-N-  
 [(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (9CI) (CA INDEX  
 NAME)

CM 1

CRN 98837-98-0

CMF C2 F6 N O4 S2

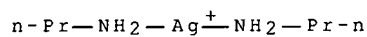


CM 2

CRN 15907-07-0

CMF C6 H18 Ag N2

CCI CCS

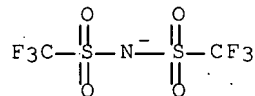


RN 858101-36-7 HCAPLUS  
 CN Silver(1+), bis(ethanamine)-, salt with 1,1,1-trifluoro-N-  
 [(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (9CI) (CA INDEX  
 NAME)

CM 1

CRN 98837-98-0

CMF C2 F6 N O4 S2

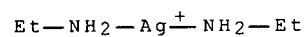


CM 2

CRN 18080-03-0

CMF C4 H14 Ag N2

CCI CCS

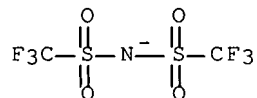


RN 858101-37-8 HCAPLUS  
 CN Silver(1+), bis(methanamine)-, salt with 1,1,1-trifluoro-N-  
 [(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (9CI) (CA INDEX  
 NAME)

CM 1

CRN 98837-98-0

CMF C2 F6 N O4 S2

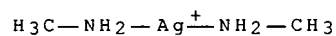


CM 2

CRN 16972-62-6

CMF C2 H10 Ag N2

CCI CCS



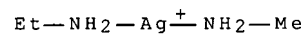
RN 858101-39-0 HCAPLUS  
 CN Silver(1+), (ethanamine)(methanamine)-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 858101-38-9

CMF C3 H12 Ag N2

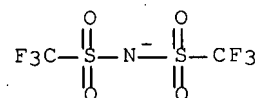
CCI CCS



CM 2

CRN 98837-98-0

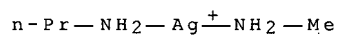
CMF C2 F6 N O4 S2



RN 858101-41-4 HCAPLUS  
 CN Silver(1+), (methanamine)(1-propanamine)-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:1) (9CI) (CA INDEX NAME)

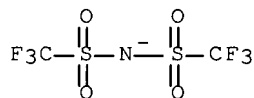
CM 1

CRN 858101-40-3  
 CMF C4 H14 Ag N2  
 CCI CCS



CM 2

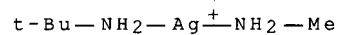
CRN 98837-98-0  
 CMF C2 F6 N O4 S2



RN 858101-43-6 HCAPLUS  
 CN Silver(1+), (methanamine)(2-methyl-2-propanamine)-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:1) (9CI) (CA INDEX NAME)

CM 1

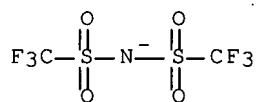
CRN 858101-42-5  
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 CCI CCS



CM 2

CRN 98837-98-0  
 CMF C2 F6 N O4 S2





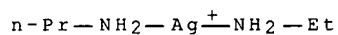
RN 858101-45-8 HCAPLUS  
 CN Silver(1+), (ethanamine)(1-propanamine)-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 858101-44-7

CMF C5 H16 Ag N2

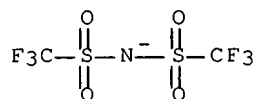
CCI CCS



CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



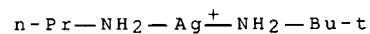
RN 858101-47-0 HCAPLUS  
 CN Silver(1+), (2-methyl-2-propanamine)(1-propanamine)-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 858101-46-9

CMF C7 H20 Ag N2

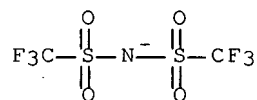
CCI CCS



CM 2

CRN 98837-98-0

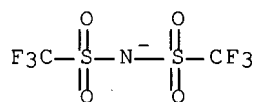
CMF C2 F6 N O4 S2



RN 880261-01-8 HCAPLUS  
 CN Silver(1+), bis(2-methyl-2-propanamine)-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:1) (9CI) (CA INDEX NAME)

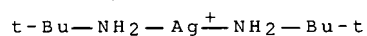
CM 1

CRN 98837-98-0  
 CMF C2 F6 N O4 S2



CM 2

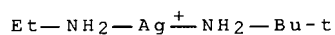
CRN 15905-74-5  
 CMF C8 H22 Ag N2  
 CCI CCS



RN 880261-03-0 HCAPLUS  
 CN Silver(1+), (ethanamine)(2-methyl-2-propanamine)-, salt with  
 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
 (1:1) (9CI) (CA INDEX NAME)

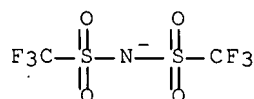
CM 1

CRN 880261-02-9  
 CMF C6 H18 Ag N2  
 CCI CCS



CM 2

CRN 98837-98-0  
 CMF C2 F6 N O4 S2



RN 880261-06-3 HCAPLUS

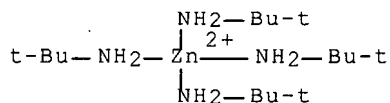
CN Zinc(2+), tetrakis(2-methyl-2-propanamine-κN)-, (T-4)-, salt  
with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide  
(1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 880261-05-2

CMF C16 H44 N4 Zn

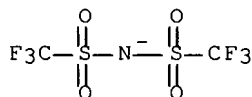
CCI CCS



CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 72

IT 858101-35-6P 858101-36-7P 858101-37-8P

858101-39-0P 858101-41-4P 858101-43-6P

858101-45-8P 858101-47-0P 880261-01-8P

880261-03-0P 880261-06-3P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)

(preparation and electrochem. properties of silver and zinc amine trifluoromethanesulfonimide room-temperature ionic liqs. and use as **electrolytes** for metal electrodeposition)

REFERENCE COUNT:

37

THERE ARE 37 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L21 ANSWER 4 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2005:1226939 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:170491  
 TITLE: Novel zinc ion conducting polymer gel electrolytes based on ionic liquids  
 AUTHOR(S): Xu, Jun John; Ye, Hui; Huang, Jian  
 CORPORATE SOURCE: Department of Materials Science and Engineering, Rutgers, the State University of New Jersey, Piscataway, NJ, 08854, USA  
 SOURCE: Electrochemistry Communications (2005), 7(12), 1309-1317  
 CODEN: ECCMF9; ISSN: 1388-2481  
 PUBLISHER: Elsevier B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

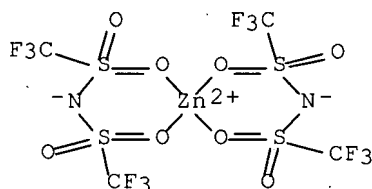
AB The authors report novel zinc ion conducting polymer gel electrolytes (PGEs) based on nonvolatile room temperature ionic liqs. The PGEs consist of an ionic liquid, with a zinc salt dissolved in it, blended with a polymer matrix, poly(vinylidene fluoride-co- hexafluoropropylene) (PVDF-HFP). The resultant electrolyte membranes are freestanding, translucent, flexible and elastic, with excellent mech. integrity and strength. They possess exceptional thermal stability, exhibit essentially no weight loss under dynamic vacuum or upon heating to 200 °C, and remain the same gel phase in wide temperature ranges, with ionic conductivities .apprx.10<sup>-3</sup> S/cm at room temperature, 10<sup>-4</sup> S/cm at -20° and 4-5 + 10<sup>-3</sup> S/cm at 80°. Electrochem. tests show that zinc ions are mobile in the membranes and zinc metal is capable of dissoln. into and deposition from the membranes. The membranes also exhibit wide electrochem. stability windows. The results of this study demonstrate the promise of developing PGEs based on ionic liqs. for potential application in next-generation nonaq. zinc battery systems.

IT 168106-25-0P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (novel zinc ion conducting polymer gel **electrolytes** based on ionic liqs.)

RN 168106-25-0 HCAPLUS

CN Zinc, bis[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-kO]methanesulfonamido-kO]-, (T-4)- (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 72, 76

IT 168106-25-0P

RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (novel zinc ion conducting polymer gel **electrolytes** based on ionic liqs.)

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 5 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:1127462 HCAPLUS Full-text

DOCUMENT NUMBER: 144:469127

TITLE: Synthesis and characterization of new block copolymer electrolytes with solvating affinities for different cations

AUTHOR(S): Ionescu-Vasii, Luminita L.; Abu-Lebdeh, Yaser; Armand, Michel

CORPORATE SOURCE: Laboratoire International sur les Materiaux Electro-Actifs UMR 2289 CNRS, Universite de Montreal, Montreal, QC, H3C 3J7, Can.

SOURCE: Solid State Ionics (2005), 176(37-38), 2769-2775  
CODEN: SSIOD3; ISSN: 0167-2738

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Poly(iminoethylene)-b-poly(oxyethylene)-b-poly(iminoethylene) (PEI-b-PEO-b-PEI) polymers were synthesized and used as a "dual" matrix for polymer electrolytes having selectivity for "hard" cations (Li<sup>+</sup>/PEO) in one phase and for "soft" cations (Cu<sup>2+</sup>/PEI) in the other. Both blocks are phase-separated, but each segment tends to crystallize, influenced by water and salt. The synthesis and characterization, including AFM imaging before and after the perfluorosulfonimide salts loading is being addressed. The new block copolymer electrolytes with solvating affinities for different cations could be used either as a reference electrode or in the fabrication of electrochromic devices.

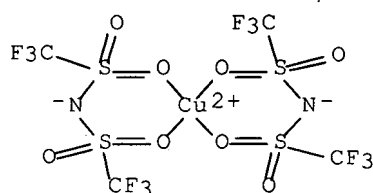
IT 162715-14-2

RL: PRP (Properties)

(poly(iminoethylene)-poly(oxyethylene) triblock copolymer complexes; synthesis and characterization of poly(iminoethylene)-poly(oxyethylene) block copolymer **electrolytes** with solvating affinities for different cations)

RN 162715-14-2 HCAPLUS

CN Copper, bis[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-kO]methanesulfonamidato-kO]- (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 37

IT 90076-65-6 162715-14-2

RL: PRP (Properties)

(poly(iminoethylene)-poly(oxyethylene) triblock copolymer complexes; synthesis and characterization of poly(iminoethylene)-poly(oxyethylene) block copolymer **electrolytes** with solvating affinities for different cations)

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L21 ANSWER 6 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:248866 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:10502  
 TITLE: Plastic crystal electrolytes based on a polar,  
 neutral matrix  
 INVENTOR(S): Abu-Lebdeh, Yaser; Armand, Michel; Alarco,  
 Pierre-Jean  
 PATENT ASSIGNEE(S): Can.  
 SOURCE: Can. Pat. Appl., 27 pp.  
 CODEN: CPXXEB  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
CA 2435218	A1	20050128	CA 2003-2435218	200307 28

PRIORITY APPLN. INFO.: CA 2003-2435218  
 200307  
 28

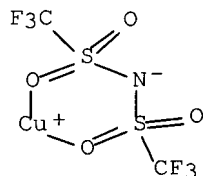
AB In the present invention, neutral organic or inorg. mols. with a high dipole moment are used as a solid matrix for inorg. salts in order to give high ionic conductivity of "ions-of -interest". The plastic crystalline phase of the solid matrixes covers a wide range of temps., which allows for the design of ionic conductors working at the required operating temperature of the devices.

IT 291300-50-0

RL: DEV (Device component use); USES (Uses)  
 (plastic crystal **electrolytes** based on a polar, neutral  
 matrix for secondary lithium batteries or photoelectrochem cells)

RN 291300-50-0 HCAPLUS

CN Copper, [1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-  
 KO]methanesulfonamidato-KO]- (9CI) (CA INDEX NAME)



IC ICM H01B001-06

ICS C08K003-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 Section cross-reference(s): 65, 72, 76

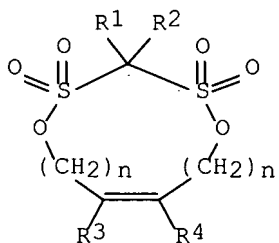
IT 102-71-6, Triethanolamine, uses 110-61-2, Succinonitrile  
 630-18-2, Pivalonitrile 2923-28-6, Silver trifluoromethane  
 sulfonate 2926-27-4 3695-98-5, 1,1,3,3-Tetracyanopropane  
 5314-55-6, Ethyl trimethoxy silane 14283-07-9, Lithium  
 tetrafluoroborate 14984-76-0 25322-68-3, Polyethylene oxide  
 33454-82-9, Lithium trifluoromethane sulfonate 34723-47-2  
 39302-37-9, Lithium titanium oxide 42152-44-3, Copper  
 trifluoromethane sulfonate 52627-24-4, Cobalt lithium oxide

90076-65-6 90076-67-8 165324-08-3 165324-09-4 168106-22-7  
195199-57-6 **291300-50-0**

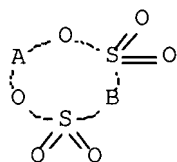
RL: DEV (Device component use); USES (Uses)  
(plastic crystal **electrolytes** based on a polar, neutral  
matrix for secondary lithium batteries or photoelectrochem cells)

L21 ANSWER 7 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:823614 HCAPLUS Full-text  
DOCUMENT NUMBER: 141:334876  
TITLE: Electrolyte solution for secondary battery and  
the battery  
INVENTOR(S): Kusachi, Yuki; Utsuki, Koji  
PATENT ASSIGNEE(S): NEC Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 27 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

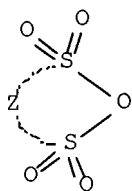
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004281325	A	20041007	JP 2003-74054	20030318
PRIORITY APPLN. INFO.:			JP 2003-74054	20030318
OTHER SOURCE(S):		MARPAT 141:334876		
GI				



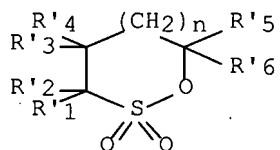
I



II



III



IV

AB The electrolyte solution contains an aprotic solvent and an unsatd. cyclic disulfonate ester I, where R1-R4 = H, Me, Et, or halogen and n = integer 0-2. The electrolyte solution may also contain II [A = (substituted) C1-5 (fluoro)alkylene,

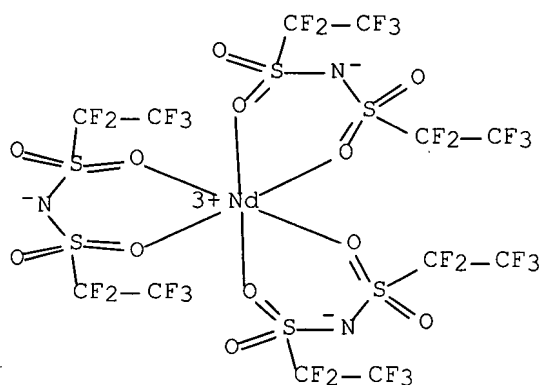
carbonyl, sulfinyl, or bivalent C2-6 group containing ether bond connected (fluoro)alkylene units; B = (substituted) alkylene group], III [Z = (substituted) C2-4 alkylene, alkenylene, aromatic or heterocyclic group], or IV (n = integer 0-2, R'1-R'6 = H C1-12 alkyl, C3-6 cycloalkyl, or C6-12 aryl group). The battery is a secondary Li battery.

IT 259194-36-0 259194-40-6 634598-36-0  
634598-37-1

RL: MOA (Modifier or additive use); USES (Uses)  
(electrolyte solns. containing cyclic disulfonate esters  
and other additives for secondary lithium batteries)

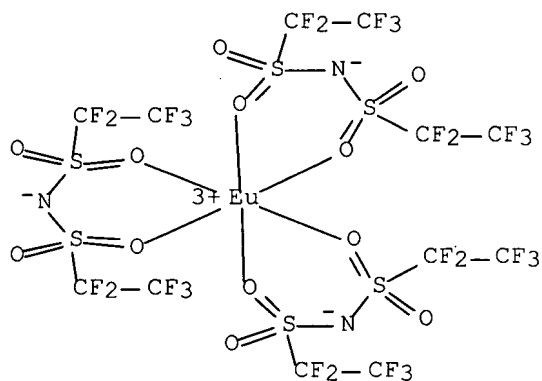
RN 259194-36-0 HCAPLUS

CN Neodymium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamidato- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX  
NAME)



RN 259194-40-6 HCAPLUS

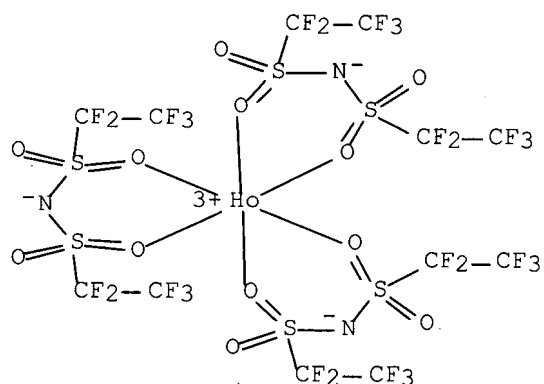
CN Europium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamidato- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX  
NAME)



RN 634598-36-0 HCAPLUS

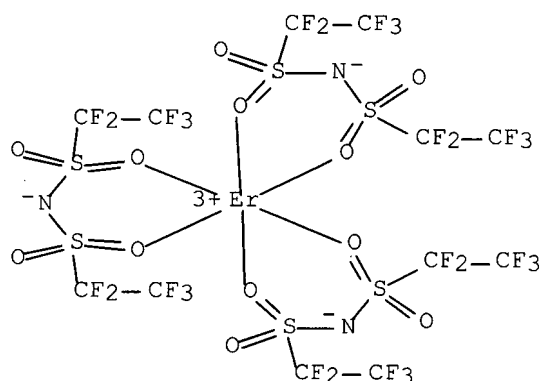
CN Holmium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamidato- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX  
NAME)





RN 634598-37-1 HCAPLUS

CN Erbium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl-kO]ethanesulfonamidato-kO]-, (OC-6-11)- (9CI) (CA INDEX NAME)



IC ICM H01M010-40

ICS H01M004-58

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 872-36-6, Vinylene carbonate 1120-71-4, 1,3-Propanesultone 14913-52-1, Neodymium ion (Nd<sup>3+</sup>), uses 18472-30-5, Erbium ion (Er<sup>3+</sup>), uses 22541-18-0, Europium ion (Eu<sup>3+</sup>), uses 22541-22-6, Holmium ion (Ho<sup>3+</sup>), uses 259194-36-0 259194-40-6 634598-36-0 634598-37-1

RL: MOA (Modifier or additive use); USES (Uses)

(**electrolyte** solns. containing cyclic disulfonate esters and other additives for secondary lithium batteries)

L21 ANSWER 8 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:181920 HCAPLUS Full-text

DOCUMENT NUMBER: 140:184814

TITLE: Electrolyte solution for secondary battery

INVENTOR(S): Utsugi, Koji; Kusachi, Yuki; Yamazaki, Ikiko

PATENT ASSIGNEE(S): NEC Corporation, Japan

SOURCE: Eur. Pat. Appl., 35 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1394888	A1	20040303	EP 2003-90268	20030822
EP 1394888	B1	20060412		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2004281368	A	20041007	JP 2003-289432	20030807
US 2004043300	A1	20040304	US 2003-647541	20030826
US 7163768	B2	20070116		
KR 2004019994	A	20040306	KR 2003-59849	20030828
CN 1495959	A	20040512	CN 2003-132755	20030829
PRIORITY APPLN. INFO.:				
			JP 2002-250441	A 20020829
			JP 2003-52588	A 20030228
			JP 2003-289432	A 20030807

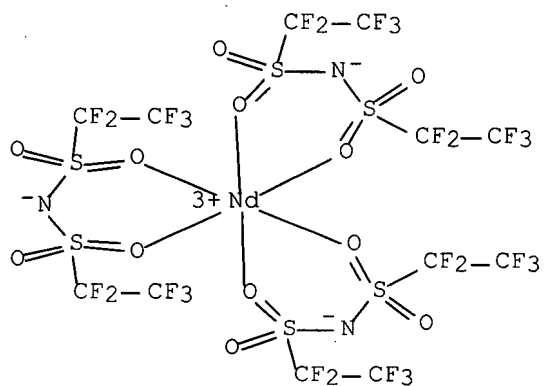
AB The present invention provides a technol. of inhibiting the decomposition of the solvent of the electrolyte solution for a secondary battery. Further, the present invention provides a technol. of prohibiting the resistance increase of a secondary battery and improving the storage properties such as improving the capacity retention ratio. An electrolyte solution comprising non-proton solvent and cyclic sulfonic ester including at least two sulfonyl groups may be used.

IT 259194-36-0 259194-40-6 634598-36-0  
634598-37-1

RL: MOA (Modifier or additive use); USES (Uses)  
(**electrolyte** solution for secondary battery)

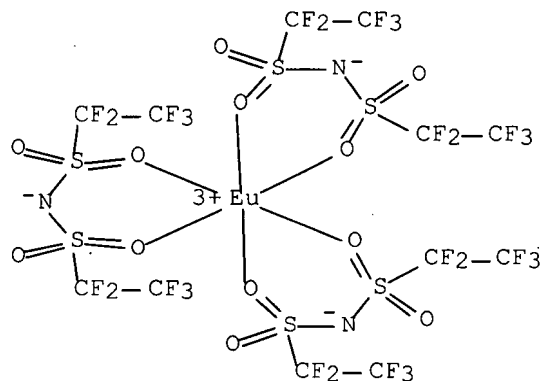
RN 259194-36-0 HCAPLUS

CN Neodymium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl-kO]ethanesulfonamidato-kO]-, (OC-6-11)-(9CI) (CA INDEX NAME)



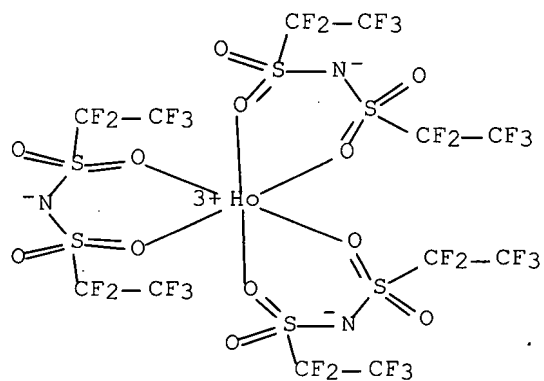
RN 259194-40-6 HCAPLUS

CN Europium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamidato- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX NAME)

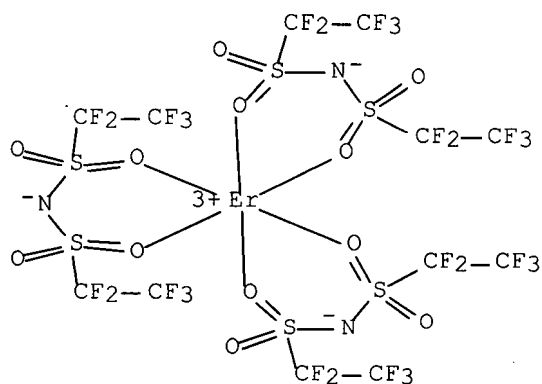


RN 634598-36-0 HCAPLUS

CN Holmium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamidato- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX NAME)



RN 634598-37-1 HCAPLUS  
 CN Erbium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl-  
 $\kappa$ O]ethanesulfonamido- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX  
 NAME).



IC ICM H01M010-40  
 ICS H01M006-16  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 IT 1120-71-4, 1,3-Propanesultone 14913-52-1, Neodymium(3+), uses  
 18472-30-5, Erbium(3+), uses 22541-18-0, Europium(3+), uses  
 22541-22-6, Holmium(3+), uses 37181-39-8, Triflate 99591-73-8  
 99591-74-9 99591-80-7 259194-36-0 259194-40-6  
 634598-36-0 634598-37-1 659737-87-8  
 659737-88-9 659737-89-0 659737-90-3  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (electrolyte solution for secondary battery)  
 REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR  
 THIS RECORD. ALL CITATIONS AVAILABLE IN  
 THE RE FORMAT

L21 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:117748 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:166747  
 TITLE: Room-temperature-molten ammonium salts showing  
 high ion conductivity and good air stability as  
 electrolytes for electrochemical devices  
 INVENTOR(S): Matsumoto, Hajime  
 PATENT ASSIGNEE(S): National Institute of Advanced Industrial  
 Science and Technology, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004043334	A	20040212	JP 2002-200668	20020709

PRIORITY APPLN. INFO.: JP 2002-200668

200207  
09

OTHER SOURCE(S): MARPAT 140:166747

AB The salts are  $[RNR_1R_2R_2]+X^-$  [R = redox organic group;  $R_1$ - $R_3$  = (halo)alkyl, alkoxy, aryl, aralkyl, alkoxyalkyl;  $R_1$  and  $R_2$  may form 5-8-membered rings with N;  $X^-$  = halides,  $BF_4^-$ ,  $PF_6^-$ , etc.]. The electrochem. devices containing the salts and ferrocenium salts are preferably solar cells and electrochromic devices.

IT 655247-50-0P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(room-temperature-molten ammonium salts showing high ion conductivity and good air stability as **electrolytes** for solar cells and electrochromic devices)

RN 655247-50-0 HCAPLUS

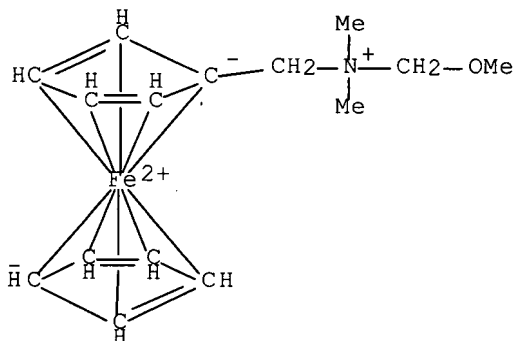
CN Methanaminium, 1-ferrocenyl-N-(methoxymethyl)-N,N-dimethyl-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 655247-49-7

CMF C15 H22 Fe N O

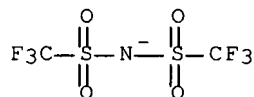
CCI CCS



CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



IC ICM C07F017-02

ICS H01L031-04; H01M014-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 29, 73

IT 655247-50-0P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(room-temperature-molten ammonium salts showing high ion conductivity and good air stability as **electrolytes** for solar cells and electrochromic devices)

L21 ANSWER 10 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:57903 HCAPLUS Full-text

DOCUMENT NUMBER: 140:131080

TITLE: Electrolyte solution for the secondary battery and the battery using the solution

INVENTOR(S): Utsuki, Koji; Mori, Mitsuhiro

PATENT ASSIGNEE(S): NEC Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

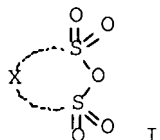
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ---	DATE -----	APPLICATION NO. -----	DATE
JP 2004022336	A	20040122	JP 2002-175648	200206 17
PRIORITY APPLN. INFO.:			JP 2002-175648	200206 17

GI



AB The electrolyte solution has a sulfonic acid anhydride I [X = (substituted) C2-4 alkylene, (substituted) C2-4 alkenyl, or (substituted) aromatic ring] in an aprotic solvent. The battery has a cathode, an anode, and the above electrolyte solution

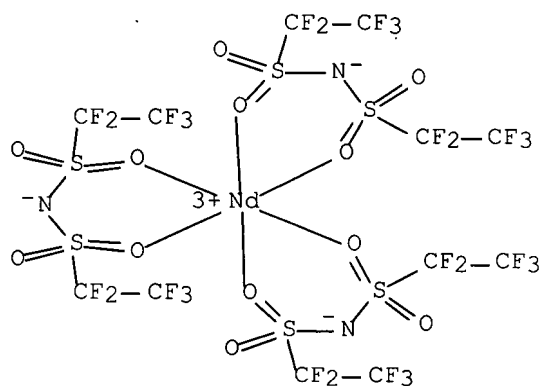
IT 259194-36-0 259194-40-6 634598-36-0  
634598-37-1

RL: MOA (Modifier or additive use); USES (Uses)

(**electrolyte** solns. containing sulfonic acid anhydrides for secondary batteries)

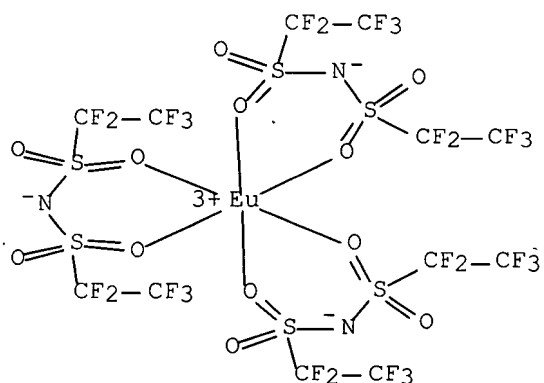
RN 259194-36-0 HCAPLUS

CN Neodymium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl-kO]ethanesulfonamidato-kO]-, (OC-6-11)- (9CI) (CA INDEX NAME)



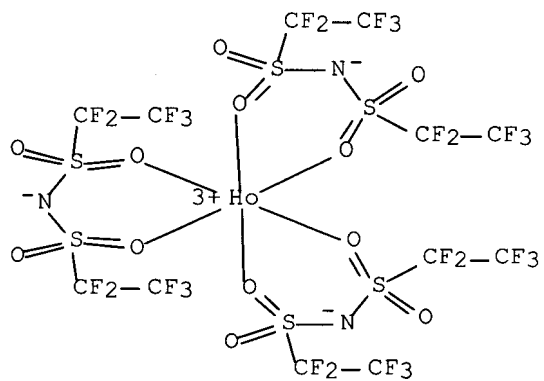
RN 259194-40-6 HCAPLUS

CN Europium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamido- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX NAME)

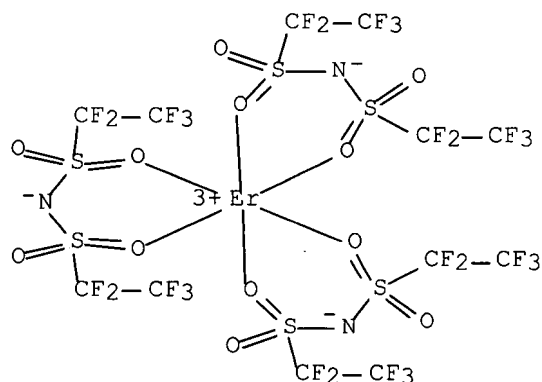


RN 634598-36-0 HCAPLUS

CN Holmium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamido- $\kappa$ O]-, (OC-6-11)- (9CI) (CA INDEX NAME)



RN 634598-37-1 HCAPLUS  
 CN Erbium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl-  
 κO]ethanesulfonamido-κO]-, (OC-6-11)- (9CI) (CA INDEX  
 NAME)



IC ICM H01M010-40  
 ICS H01M004-02; H01M004-58  
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
 IT 872-36-6, Vinylene carbonate 4378-87-4 76076-58-9 82727-20-6  
 259194-36-0 259194-40-6 634598-36-0  
 634598-37-1 648922-25-2 648922-26-3 648922-27-4  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (electrolyte solns. containing sulfonic acid anhydrides for  
 secondary batteries)

L21 ANSWER 11 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2004:3207 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:84364  
 TITLE: Electrolytes for electrooptic devices comprising  
 ionic liquids  
 INVENTOR(S): Warner, Benjamin P.; McCleskey, T. Mark;  
 Agrawal, Anoop; Cronin, John P.; Tonazzi, Juan  
 C. L.; Burrell, Anthony K.  
 PATENT ASSIGNEE(S): The Regents of the University of California, USA  
 SOURCE: PCT Int. Appl., 105 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004001877	A2	20031231	WO 2003-US19677	20030620
WO 2004001877	A3	20050203		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,  
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD,  
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ,  
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
 NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ,



TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,  
 BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,  
 SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,  
 NE, SN, TD, TG

AU 2003256281	A1	20040106	AU 2003-256281	200306 20
BR 2003005630	A	20041130	BR 2003-5630	200306 20
EP 1529240	A2	20050511	EP 2003-761234	200306 20
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1672094	A	20050921	CN 2003-817384	200306 20
JP 2005530894	T	20051013	JP 2004-516104	200306 20
PRIORITY APPLN. INFO.:			US 2002-390611P	P 200206 21
			WO 2003-US19677	W 200306 20

OTHER SOURCE(S): MARPAT 140:84364

AB Electrolyte solns. are described which have glass transition temps. of .ltorsim.-40° and which comprise ≥1 bifunctional redox dyes dissolved in an an ionic liquid solvent (e.g., a molten salt solvent). The solvents preferably include lithium or quaternary ammonium cations, and perfluorinated sulfonylimide anions selected from trifluoromethylsulfonate, bis(trifluoromethylsulfonyl)imide, bis(perfluoroethylsulfonyl)imide, and tris(trifluoromethylsulfonyl)methide. Electrooptical devices (e.g., electrochromic windows and electrochromic mirrors) employing the electrolytes, and bifunctional redox dyes appropriate for use in the electrolytes, are also described. A method of introducing the electrolytes into electrooptical devices entailing vacuum backfilling after warming it to ≥40° is also described. The electrooptic devices exhibit enhanced stability toward UV radiation relative to conventional devices.

IT 641609-34-9P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(electrolytes for electrooptical devices comprising ionic liqs. as solvents for redox dyes and the devices and dyes)

RN 641609-34-9 HCAPLUS

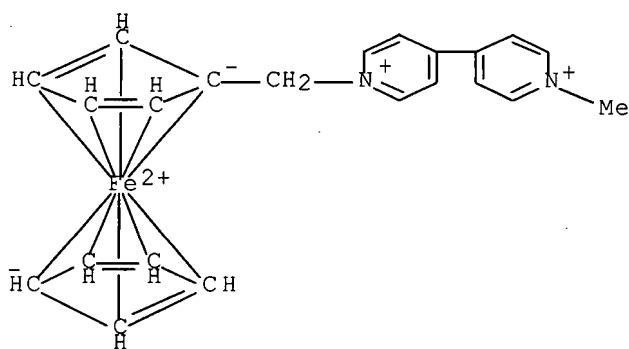
CN 4,4'-Bipyridinium, 1-(ferrocenylmethyl)-1'-methyl-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:2) (9CI) (CA INDEX NAME)

CM 1

CRN 258352-83-9

CMF C22 H22 Fe N2

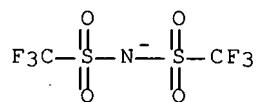
CCI CCS



CM 2

CRN 98837-98-0

CMF C2 F6 N O4 S2



IC ICM H01M

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 41, 72, 74

IT 641609-34-9P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(electrolytes for electrooptical devices comprising ionic liqs. as solvents for redox dyes and the devices and dyes)

L21 ANSWER 12 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:991842 HCAPLUS Full-text

DOCUMENT NUMBER: 140:29537

TITLE: Electrolyte solution for secondary lithium battery and the battery using the solution

INVENTOR(S): Utsugi, Koji; Mori, Mitsuhiro

PATENT ASSIGNEE(S): NEC Corporation, Japan

SOURCE: PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2003105268	A1	20031218	WO 2003-JP7418	

200306

11

W: CA, CN, KR

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,  
IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR

JP 2004014459 A 20040115 JP 2002-170228

200206

11

CN 1613165 A 20050504 CN 2003-802029

200306

11

US 2005100795 A1 20050512 US 2003-726013

200312

03

PRIORITY APPLN. INFO.:

JP 2002-170228

A

200206

11

WO 2003-JP7418

W

200306

11

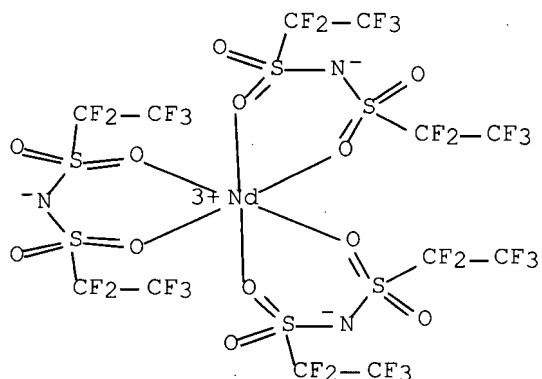
AB The electrolyte solution comprises at least **imide anions**, **transition metal** ions and a compound having a **sulfonyl** group, in an aprotic solvent. The battery using the electrolyte solution has long cycle life and high safety.

IT 259194-36-0 259194-40-6 634598-36-0  
634598-37-1

RL: DEV (Device component use); USES (Uses)  
(**electrolyte** solns. containing **sulfonyl** compds.,  
**transition metal** ions and **imide**  
**anions** for secondary lithium batteries)

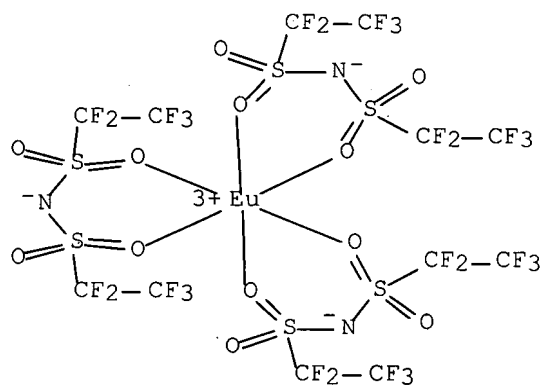
RN 259194-36-0 HCAPLUS

CN Neodymium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl-  
κO]ethanesulfonamidato-κO]-, (OC-6-11)-(9CI) (CA INDEX  
NAME)



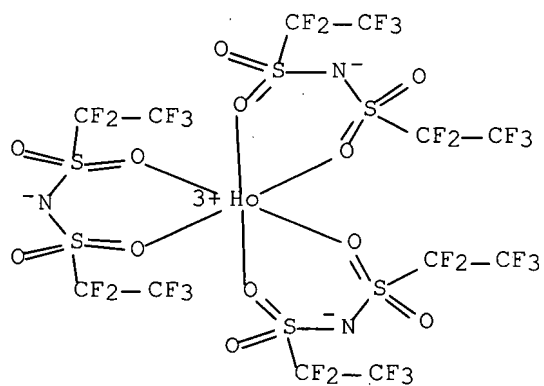
RN 259194-40-6 HCAPLUS

CN Europium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl-  
κO]ethanesulfonamidato-κO]-, (OC-6-11)-(9CI) (CA INDEX  
NAME)



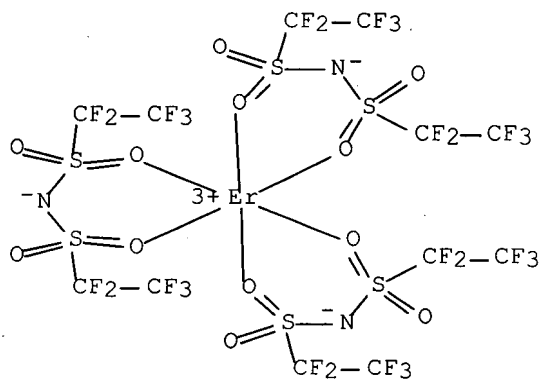
RN 634598-36-0 HCAPLUS

CN Holmium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamidato- $\kappa$ O]-, (OC-6-11)-(9CI) (CA INDEX NAME)



RN 634598-37-1 HCAPLUS

CN Erbium, tris[1,1,2,2,2-pentafluoro-N-[(pentafluoroethyl)sulfonyl- $\kappa$ O]ethanesulfonamidato- $\kappa$ O]-, (OC-6-11)-(9CI) (CA INDEX NAME)



IC ICM H01M010-40  
ICS H01M004-02  
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
ST secondary lithium battery electrolyte aprotic solvent; battery  
electrolyte imide **transition metal**  
**sulfonyl** compd  
IT Battery electrolytes  
(electrolyte solns. containing **sulfonyl** compds.,  
**transition metal** ions and **imide**  
**anions** for secondary lithium batteries)  
IT Secondary batteries  
(lithium; electrolyte solns. containing **sulfonyl** compds.,  
**transition metal** ions and **imide**  
**anions** for secondary lithium batteries)  
IT 7440-44-0, Carbon, uses  
RL: DEV (Device component use); USES (Uses)  
(amorphous; anode; electrolyte solns. containing **sulfonyl**  
compds., **transition metal** ions and  
**imide anions** for secondary lithium batteries)  
IT 7439-93-2, Lithium, uses 7782-42-5, Graphite, uses 68848-64-6  
RL: DEV (Device component use); USES (Uses)  
(anode; electrolyte solns. containing **sulfonyl** compds.,  
**transition metal** ions and **imide**  
**anions** for secondary lithium batteries)  
IT 12057-17-9, Lithium manganese oxide (LiMn2O4)  
RL: DEV (Device component use); USES (Uses)  
(cathode; electrolyte solns. containing **sulfonyl** compds.,  
**transition metal** ions and **imide**  
**anions** for secondary lithium batteries)  
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate  
108-32-7, Propylene carbonate 872-36-6, Vinylene carbonate  
1120-71-4, 1,3-Propane sultone 132843-44-8 **259194-36-0**  
**259194-40-6 634598-36-0 634598-37-1**  
RL: DEV (Device component use); USES (Uses)  
(electrolyte solns. containing **sulfonyl** compds.,  
**transition metal** ions and **imide**  
**anions** for secondary lithium batteries)  
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN  
THE RE FORMAT

L21 ANSWER 13 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:586714 HCAPLUS Full-text  
DOCUMENT NUMBER: 139:136062  
TITLE: Manufacture of electrolytic solution containing  
complex made up of transition metal and imido  
anion for secondary battery, manufacture of  
secondary battery, and secondary battery with  
improved cycle characteristics  
INVENTOR(S): Mori, Mitsuhiro; Naoi, Katsuhiko; Niino, Tatsuo;  
Utsuki, Koji; Hasegawa, Etsuo  
PATENT ASSIGNEE(S): NEC Corp., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2003217662

A

20030731

JP 2002-107472

200204

10

PRIORITY APPLN. INFO.:

JP 2001-349839

A

200111

15

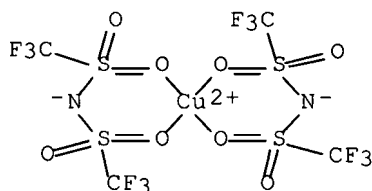
AB The process comprises the steps of (1) dissolving a complex made up of a ~~transition metal~~ and an imido anion in a solvent and (2) dissolving Li salt. The imido anion may be  $N(CnF2+n+1SO2)_2$  or  $N(CnF2+n+1SO2)(CmF2m+1SO2)$  ( $n, m =$  natural number). The Li salt may be  $LiPF_6$ ,  $LiBF_4$ ,  $LiAsF_6$ ,  $LiSbF_6$ ,  $LiClO_4$ , and/or  $LiAlCl_4$ . The transition metal may be a lanthanoid metal such as Eu, Ny, Er, and/or Ho.

IT 162715-14-2 207861-67-4 460092-04-0  
569362-43-2

RL: TEM (Technical or engineered material use); USES (Uses)  
(**electrolytic** solution containing complex made up of  
transition metal and imido anion for Li secondary battery with  
improved cycle characteristics)

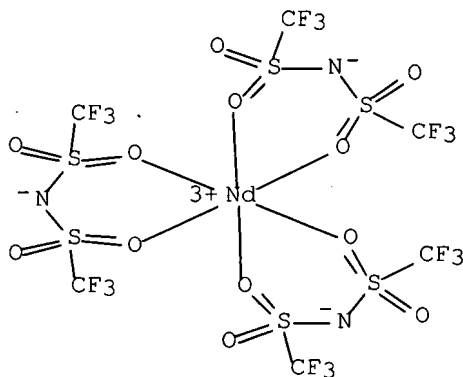
RN 162715-14-2 HCAPLUS

CN Copper, bis[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-  
κO]methanesulfonamidato-κO]- (CA INDEX NAME)



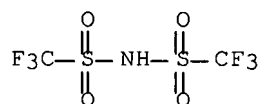
RN 207861-67-4 HCAPLUS

CN Neodymium, tris[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-  
κO]methanesulfonamidato-κO]-, (OC-6-11)- (9CI) (CA  
INDEX NAME)



RN 460092-04-0 HCAPLUS

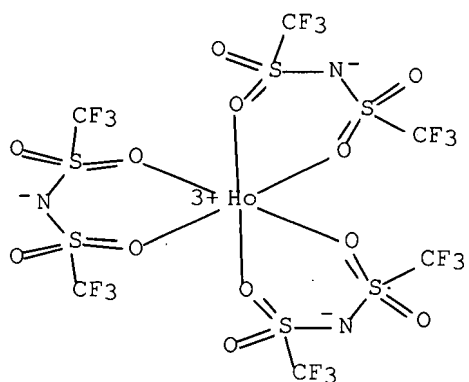
CN Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-,  
chromium(3+) salt (9CI) (CA INDEX NAME)



● 1/3 Cr(III)

RN 569362-43-2 HCAPLUS

CN Holmium, tris[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-  
κO]methanesulfonamidato-κO]-, (OC-6-11)- (9CI) (CA  
INDEX NAME)



IC ICM H01M010-40

ICS H01M004-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 7440-00-8, Neodymium, uses 7440-52-0, Erbium, uses 7440-53-1,  
Europium, uses 7440-60-0, Holmium, uses 162715-14-2  
207861-67-4 460092-04-0 569362-43-2

RL: TEM (Technical or engineered material use); USES (Uses)  
(electrolytic solution containing complex made up of  
transition metal and imido anion for Li secondary battery with  
improved cycle characteristics)

L21 ANSWER 14 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2003:22564 HCAPLUS Full-text

DOCUMENT NUMBER: 138:92818

TITLE: Battery and its manufacture

INVENTOR(S): Takagi, Ryosuke

PATENT ASSIGNEE(S): Sony Corp., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2003007335

A

20030110

JP 2001-188149

200106  
21

PRIORITY APPLN. INFO.:

JP 2001-188149

200106  
21

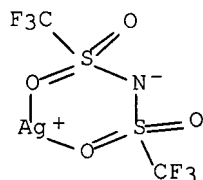
AB The battery contains Ag at  $\leq 10,000$  ppm of the electrolyte solvent mass, and is prepared by dissolving a Ag salt, having counter anion selected from  $\text{CF}_3\text{SO}_3^-$ ,  $(\text{CF}_3\text{SO}_2)_2\text{N}^-$ ,  $(\text{CF}_3\text{SO}_2)_3\text{C}^-$ ,  $\text{BF}_4^-$ , and  $\text{PF}_6^-$ , in the solvent.

IT 189114-61-2

RL: DEV (Device component use); USES (Uses)  
(electrolyte solns. with controlled silver fluoro salt content for secondary lithium batteries)

RN 189114-61-2 HCAPLUS

CN Silver, [1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-  
 $\kappa\text{O}$ ]methanesulfonamidato- $\kappa\text{O}$ ]- (9CI) (CA INDEX NAME)



IC ICM H01M010-40

ICS H01M004-02

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate  
2923-28-6, Silver trifluoromethanesulfonate. 7761-88-8, Silver  
nitrate, uses 14283-07-9, Lithium fluoroborate 21324-40-3,  
Lithium hexafluorophosphate 33454-82-9, Lithium  
trifluoromethanesulfonate 90076-65-6 114395-71-0 132404-42-3  
189114-61-2

RL: DEV (Device component use); USES (Uses)  
(electrolyte solns. with controlled silver fluoro salt content for secondary lithium batteries)

L21 ANSWER 15 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:757315 HCAPLUS Full-text

DOCUMENT NUMBER: 137:239065

TITLE: Electrochemical preparation method for metallic salts

INVENTOR(S): Dunach, Clinet Isabel; Favier, Isabelle;  
Hebrault, Dominique; Desmurs, Jean Roger

PATENT ASSIGNEE(S): Rhodia Chimie, Fr.; Rhodia Poulenc Chimie

SOURCE: Fr. Demande, 20 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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FR 2818994

A1

20020705

FR 2000-17316

200012

29

FR 2818994

B1

20040109

FR 2000-17316

200012

29

PRIORITY APPLN. INFO.:

AB The invention concerns electrochem. preparation method for metallic salts of formulas:  $[(RfSO_2(O)a)c(N)b]n-Xn^+$  where Rf is organic radical  $C_mH_{2m+1}$  with  $m=1-7$ , a and b are different one from another, varying from 0 to 1, and when  $a=1$ ,  $c=1$  and when  $a=0$ ,  $c=2$ ; n changes from 1 to 6, and X is metallic element by electrolysis of solution of substrate of formulas:  $[(RfSO_2(O)a)c(N)b]H$ . The process is carried out in the one compartment electrolytic cell with sacrificial anode from metal "X" of salt prepared, using polar organic solvent with dielec. constant  $\geq 8$ .

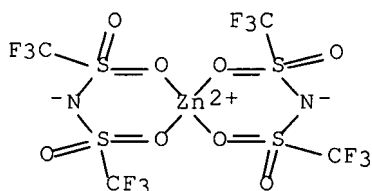
IT **168106-25-0P**, Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, zinc salt **207861-63-0P**

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)

(electrochem. preparation by **electrolysis** of trifluoro-N-[(trifluoromethyl)sulfonyl] with sacrificial anode)

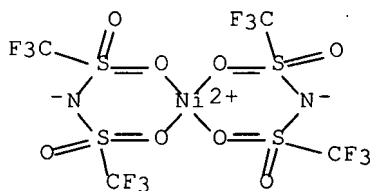
RN 168106-25-0 HCAPLUS

CN Zinc, bis[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl- $\kappa O$ ]methanesulfonamidato- $\kappa O$ ]-, (T-4)- (9CI) (CA INDEX NAME)



RN 207861-63-0 HCAPLUS

CN Nickel, bis[1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl- $\kappa O$ ]methanesulfonamidato- $\kappa O$ ]- (CA INDEX NAME)



IC ICM C25B003-12

ICS C25B011-04; C07C309-06; C07C311-48

ICA B01J031-12

ICI B01J031-12, B01J103-40, B01J103-12, B01J103-64, B01J103-46

CC 72-9 (Electrochemistry)

Section cross-reference(s): 29

IT 133395-16-1P **168106-25-0P**, Methanesulfonamide, 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]-, zinc salt

175438-45-6P, Methanesulfonamide, 1,1,1-trifluoro-N-  
[(trifluoromethyl)sulfonyl]-, aluminum salt **207861-63-0P**  
391611-05-5P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
process); PNU (Preparation, unclassified); PREP (Preparation); PROC  
(Process)

(electrochem. preparation by **electrolysis** of  
trifluoro-N-[(trifluoromethyl)sulfonyl with sacrificial anode)

L21 ANSWER 16 OF 16 HCAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2002:560659 HCAPLUS Full-text

DOCUMENT NUMBER: 137:391850

TITLE: Poly(3,4-alkylenedioxythiophene)-Based  
Supercapacitors Using Ionic Liquids as  
Supporting Electrolytes

AUTHOR(S): Stenger-Smith, John D.; Webber, Cynthia K.;  
Anderson, Nicole; Chafin, Andrew P.; Zong,  
Kyukwan; Reynolds, John R.

CORPORATE SOURCE: Research Department, Chemistry Division, Naval  
Air Warfare Center/Weapons Division, China Lake,  
CA, 93555, USA

SOURCE: Journal of the Electrochemical Society (2002),  
149(8), A973-A977

CODEN: JESOAN; ISSN: 0013-4651

PUBLISHER: Electrochemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A series of dual conducting polymer based type I supercapacitors were constructed using poly(3,4-propylenedioxythiophene) and poly(3,4-ethylenedioxythiophene) as electrode couples. The switching speeds and cycle lifetimes of these supercapacitors were compared using two types of supporting electrolytes; lithium bis(trifluoromethanesulfonyl)imide and 1-ethyl-3-methyl-1-H-imidazolium bis(trifluoromethanesulfonyl)imide (a room temperature molten salt). The results indicate that supercapacitors using 1-ethyl-3-methyl-1-H-imidazolium bis(trifluoromethanesulfonyl)imide as the supporting electrolyte have cycle lifetimes superior to supercapacitors using lithium bis(trifluoromethanesulfonyl)imide as the supporting electrolyte.

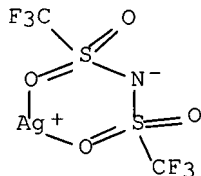
IT **189114-61-2P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)

(polyalkylenedioxythiophene-based supercapacitors using ionic  
liqs. as supporting **electrolytes**)

RN 189114-61-2 HCAPLUS

CN Silver, [1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl-  
kO]methanesulfonamidato-kO]- (9CI) (CA INDEX NAME)



CC 76-10 (Electric Phenomena)  
Section cross-reference(s): 38

IT **189114-61-2P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)

(polyalkylenedioxythiophene-based supercapacitors using ionic  
liqs. as supporting **electrolytes**)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

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